



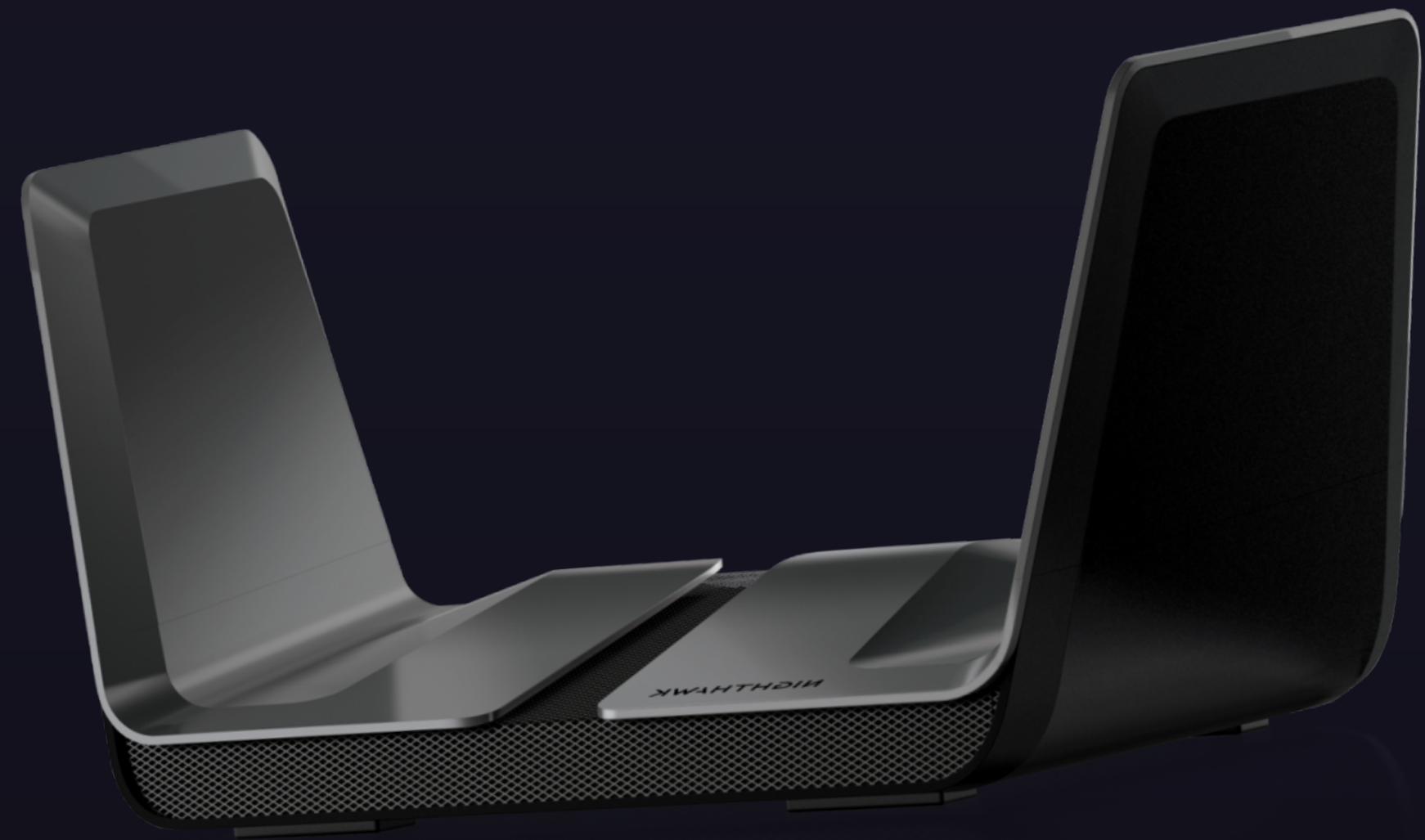
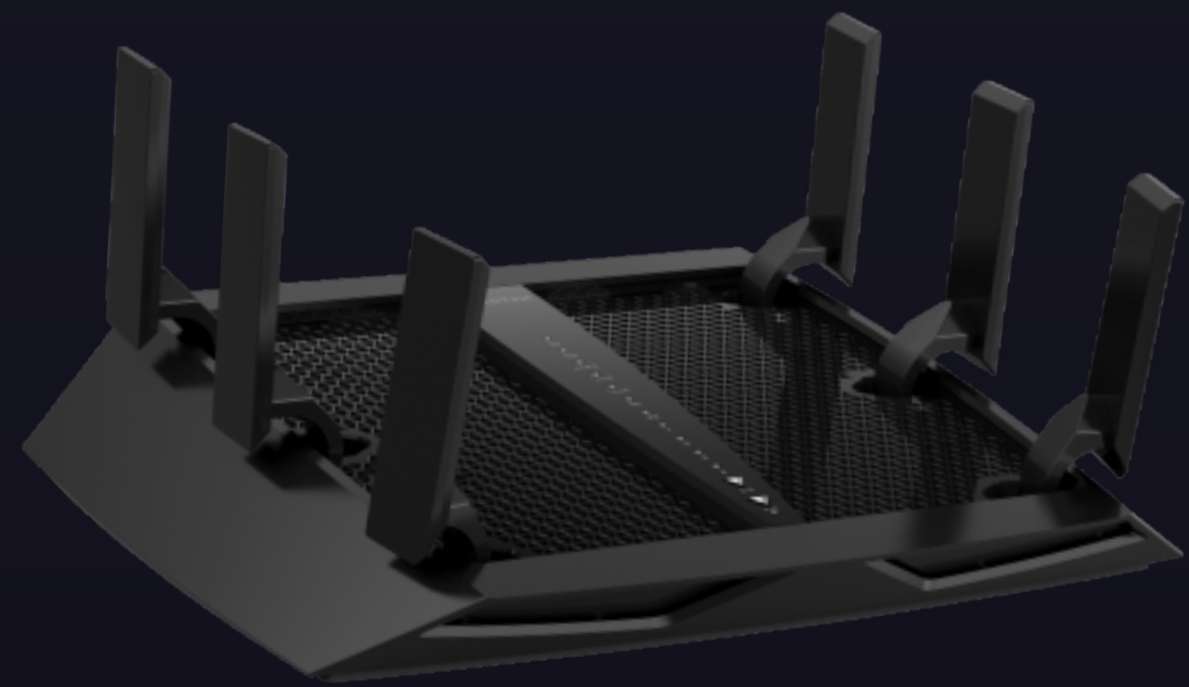
# EDUARDO SAN MARTIN MOROTE

FRONTEND NERD

  @posva

 [esm.dev](https://esm.dev)

# MODERN ROUTING



# MODERN ROUTING



# MODERN ROUTING

# MODERN FRONTEND ROUTING

 <https://movies.com/search?genre=horror&page=1#filters>

 <https://movies.com/search?genre=horror&page=1#filters>



**HISTORY**

 <https://movies.com/search?genre=horror&page=1#filters>



**HISTORY**



**ROUTER**



 <https://movies.com/search?genre=horror&page=1#filters>



**HISTORY**



**MATCHER** ← **ROUTER**

 <https://movies.com/search?genre=horror&page=1#filters>



**HISTORY**



**MATCHER** ← **ROUTER** → **COMPONENTS**

 <https://movies.com/search?genre=horror&page=1#filters>



**HISTORY**



**MATCHER** ← **ROUTER** → **COMPONENTS**



# HISTORY API

```
history.pushState(data, title, url)
history.replaceState(data, title, url)
window.addEventListener('popstate', handler)
```

---

```
history.state
history.length
```

↔  `https://movies.com`

```
history.state    null  
history.length  1
```

↔  `https://movies.com`

`history.state`      `null`

`history.length`    `1`

↔  `https://movies.com`

```
history.state    null  
history.length  1
```

```
history.pushState({ from: null }, '', '/releases')
```

← →  <https://movies.com/releases>

```
history.state    { from: null }  
history.length  2
```

```
history.pushState({ from: null }, '', '/releases')
```



← →  <https://movies.com/releases>

```
history.state    { from: null }  
history.length  2
```

```
history.pushState({ from: null }, '', '/releases')
```

```
history.pushState({ from: '/releases' }, '', '/search?genre=horror&page=1#filters')
```

← →  <https://movies.com/search?genre=horror&page=1#filters>

```
history.state    { from: '/releases' }  
history.length   3
```

```
history.pushState({ from: null }, '', '/releases')
```

```
history.pushState({ from: '/releases' }, '', '/search?genre=horror&page=1#filters')
```

← →  <https://movies.com/search?genre=horror&page=1#filters>

```
history.state    { from: '/releases' }  
history.length   3
```

```
history.pushState({ from: null }, '', '/releases')
```

```
history.pushState({ from: '/releases' }, '', '/search?genre=horror&page=1#filters')
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↔  <https://movies.com/releases>

```
history.state    { from: null }  
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history.pushState({ from: null }, '', '/releases')
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```
history.pushState({ from: '/releases' }, '', '/search?genre=horror&page=1#filters')
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↔  <https://movies.com/releases>

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history.state    { from: null }  
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```
history.pushState({ from: null }, '', '/releases')
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```
history.pushState({ from: '/releases' }, '', '/search?genre=horror&page=1#filters')
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← →  <https://movies.com/search?genre=horror&page=1#filters>

```
history.state    { from: '/releases' }  
history.length  3
```

```
history.pushState({ from: null }, '', '/releases')
```

```
history.pushState({ from: '/releases' }, '', '/search?genre=horror&page=1#filters')
```

 <https://movies.com/search?genre=horror&page=1#filters>

`https://movies.com/search?genre=horror&page=1#filters`

**PATH**

**QUERY**  
(or search)

**HASH**  
(or fragment)



**PATH**

/search

**QUERY**

?genre=horror&page=1

**HASH**

#filters

**PATH**

/search

**QUERY**

?genre=horror&page=1

**HASH**

#filters

location

**PATH**

/search

**QUERY**

?genre=horror&page=1

**HASH**

#filters

location.**pathname**

**PATH**

/search

**QUERY**

?genre=horror&page=1

**HASH**

#filters

location.search

**PATH**

/search

**QUERY**

?genre=horror&page=1

**HASH**

#filters

location.hash

**PATH**

/search

**QUERY**

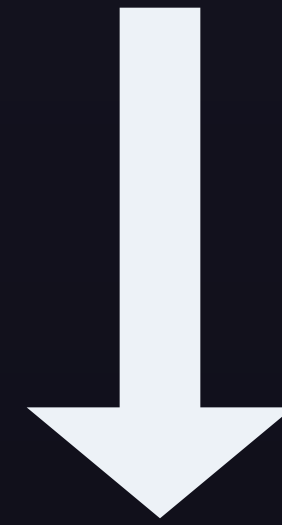
?genre=horror&page=1

**HASH**

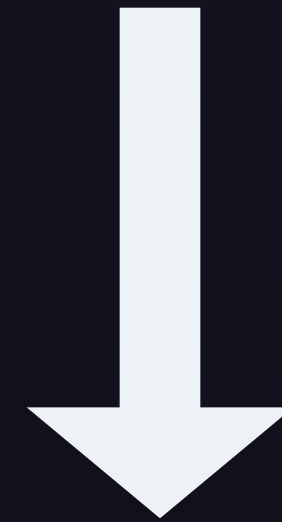
#filters

location.href

`/search?genre=horror&page=1#filters`



`/search?genre=horror&page=1#filters`



```
{  
  path: '/search',  
  query: { genre: 'horror', page: '1' },  
  hash: '#filters'  
}
```



?genre=horror&page=1

# URLSEARCHPARAMS API

```
const q = new URLSearchParams('genre=horror&page=1')

for (const key of q.keys()) {
  q.getAll(key)
}
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for (const key of q.keys()) {
  q.getAll(key)
}
```





# ENCODING

Character	Hex	Encoded
"	U+0022	%22
<	U+003C	%3C
ñ	U+00F1	%C3%B1

# ENCODING

Character	Hex	Encoded
"	U+0022	%22
<	U+003C	%3C
ñ	U+00F1	%C3%B1

```
<p class="a">
```

# ENCODING

Character	Hex	Encoded
"	U+0022	%22
<	U+003C	%3C
ñ	U+00F1	%C3%B1

<p class="a">  %3Cp%20class=%22a%22%3E

# ENCODING

Non-printable characters: `U+0000` (*NULL*) to `U+001F` (*US*) and `U+007F` (*DEL*)

Any non-ascii character: `> U+007E` (~)

The percentage character: `U+0025` (%)

# ENCODING

Non-printable characters: `U+0000` (*NULL*) to `U+001F` (*US*) and `U+007F` (*DEL*)

Any non-ascii character: `> U+007E` (~)

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**PATH**

**QUERY**

**HASH**

# ENCODING

Non-printable characters: `U+0000` (*NULL*) to `U+001F` (*US*) and `U+007F` (*DEL*)

Any non-ascii character: `> U+007E` (~)

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**PATH**

**QUERY**

**HASH**

`␣ " < > ``

# ENCODING

Non-printable characters: `U+0000` (*NULL*) to `U+001F` (*US*) and `U+007F` (*DEL*)

Any non-ascii character: `> U+007E` (~)

The percentage character: `U+0025` (%)

## PATH

`␣ " < > ``

## QUERY

## HASH

`␣ " < > ``



# ENCODING

Non-printable characters: `U+0000` (*NULL*) to `U+001F` (*US*) and `U+007F` (*DEL*)

Any non-ascii character: `> U+007E` (~)

The percentage character: `U+0025` (%)

## PATH

`␣ " < > ` # ? { }`

## QUERY

## HASH

`␣ " < > ``

# ENCODING

Non-printable characters: U+0000 (NULL) to U+001F (US) and U+007F (DEL)

Any non-ascii character: > U+007E (~)

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## PATH

␣ " < > ` # ? { }

## QUERY

␣ " < > `

## HASH

␣ " < > `

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Non-printable characters: `U+0000` (*NULL*) to `U+001F` (*US*) and `U+007F` (*DEL*)

Any non-ascii character: `> U+007E` (~)

The percentage character: `U+0025` (%)

## PATH

␣ " < > ` # ? { }

## QUERY

␣ " < > # & =

## HASH

␣ " < > `

```
location.hash = '# "<>`'
```

```
location.hash = encodeURIComponent('# "<>`')
```



```
location.hash = '# "<>`'
```

#####

```
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```

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```
location.hash = '# "<>`'
```

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location.hash = encodeURIComponent('# "<>`')
```



```
location.hash: '# "<>`'
```



```
location.hash = '# "<>`'
```

```
location.hash = encodeURIComponent('# "<>`')
```



location.hash: '# "<>`'

 https://<...>#%20"<>`



```
location.hash = '# "<>`'
```

```
location.hash = encodeURIComponent('# "<>`')
```



```
location.hash: '# "<>`'
```

 [https://<...>#%20"<>`](https://<...>#%20)



```
location.hash: '#%20%22%3C%3E%60'
```





```
location.hash = '# "<>`'
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location.hash = encodeURIComponent('# "<>`')
```



```
location.hash: '# "<>`'
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🌐 [https://<...>#%20"<>`](https://<...>#%20)



```
location.hash: '#%20%22%3C%3E%60'
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🌐 [https://<...># "<>`](https://<...># )



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location.hash: '#%20%22%3C%3E%60'
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 [https://<...># "<>`](https://<...># )



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```

```
https://<...>#%20"<>`
```

```
location.hash: '#%20%22%3C%3E%60'
```

```
https://<...>#%20%22%3C%3E%60
```



```
location.hash: '#%20%22%3C%3E%60'
```

```
https://<...># "<>`
```

```
location.hash: '#%20%22%3C%3E%60'
```

```
https://<...># "<>`
```



```
location.hash: '#%20%22%3C%3E%60'
```

```
https://<...>#%20"<>%60
```

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```

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```



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```

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https://<...># "<>`
```

```
location.hash: '#%20%22%3C%3E%60'
```

```
https://<...>#%20%22%3C%3E%60
```



```
location.hash = '# "<>`'
```

```
location.hash = encodeURIComponent('# "<>`')
```



```
location.hash: '# "<>`'
```

```
https://<...>#%20"<>`
```

```
location.hash: '#%20%22%3C%3E%60'
```

```
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https://<...>#%20"<>%60
```



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location.hash: '# "<>`'
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https://<...># "<>`
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```
location.hash: '#%20%22%3C%3E%60'
```

```
https://<...>#%20%22%3C%3E%60
```

# ENCODE YOUR URL EVEN IF IT LOOKS BAD

`encodeURIComponent / decodeURIComponent` → Path and hash

`encodeURIComponent / decodeURIComponent` → Query keys and values

# HISTORY

```
{  
  path: '/movies/493922',  
  query: {},  
  hash: ''  
}
```

- Communicate with the address bar
- Handle encoding
- Handle browser specific bugs/inconsistencies

```
{  
  path: '/movies/493922',  
  query: {},  
  hash: ''  
}
```



```
{  
  path: '/movies/493922',  
  params: { id: '493922' },  
  name: 'MovieDetail',  
  component: ...,  
  query: {},  
  hash: ''  
}
```

# MATCHER

```
{  
  path: '/movies/493922',  
  query: {},  
  hash: ''  
}
```



```
{  
  path: '/movies/493922',  
  params: { id: '493922' },  
  name: 'MovieDetail',  
  component: ...,  
  query: {},  
  hash: ''  
}
```

# MATCHER

'/home' → /^\/home\$/i

'/movies/:id' → /^\/movies\/([\^\/]+)\$/i

'/movies/:id(\n+)' → /^\/movies\/(\n+)\$/i

'/movies/new' → /^\/movies\/new\$/i

path-to-regexp

# MATCHER

<code>'/home'</code>	<code>/^\s/home\$/i</code>	<code>'/movies/new'</code>
<code>'/movies/:id'</code>	<code>/^\s/movies\/([\s\/]+)\$/i</code>	
<code>'/movies/:id(\n+)'</code>	<code>/^\s/movies\/(\n+)\$/i</code>	
<code>'/movies/new'</code>	<code>/^\s/movies\/new\$/i</code>	



# MATCHER

```
    '/home'           /^\/home$/i           '/movies/new'  
  
  '/movies/:id'      /^\/movies\/([\^\/]+)$/i  
  
  '/movies/:id(\n+)' /^\/movies\/(\n+)$/i  
  
  '/movies/new'     /^\/movies\/new$/i
```

# MATCHER

'/home'      /^\/home\$/i

'/movies/:id'      /^\/movies\/([\^\/]+)\$/i      ✓      '/movies/new'

'/movies/:id(\n+)'      /^\/movies\/(\n+)\$/i

'/movies/new'      /^\/movies\/new\$/i

# MATCHER

<code>'/home'</code>	<code>/^\s/home\$/i</code>		
<code>'/movies/:id'</code>	<code>/^\s/movies\/([\s\/]+)\$/i</code>	✓	<code>'/movies/new'</code>
<code>'/movies/:id(\n+)'</code>	<code>/^\s/movies\/(\n+)\$/i</code>	✓	
<code>'/movies/new'</code>	<code>/^\s/movies\/new\$/i</code>	✓	

# MATCHER

'/home'      /^\/home\$/i

'/movies/:id'      /^\/movies\/([\^\/]+)\$/i



'/movies/new'

'/movies/:id(\n+)'      /^\/movies\/(\n+)\$/i



'/movies/new'      /^\/movies\/new\$/i



# MATCHER

70

`'/home'` `/^\//home$/i`

130

`'/movies/:id'` `/^\//movies\/([\^\/]+)$/i`



`'/movies/new'`

135

`'/movies/:id(\n+)'` `/^\//movies\/(\n+)$/i`



140

`'/movies/new'` `/^\//movies\/new$/i`



# MATCHER

140 `'/movies/new'` `'/movies/new'`

135 `'/movies/:id(\n+)'`

130 `'/movies/:id'`

70 `'/home'`

# MATCHER

140 `'/movies/new'` ✓ `'/movies/new'`

135 `'/movies/:id(\n+)'`

130 `'/movies/:id'`

70 `'/home'`

# MATCHER

140 `'/movies/new'`

135 `'/movies/:id(\n+)'`

130 `'/movies/:id'`

70 `'/home'`



# MATCHER

140 `'/movies/new'`

135 `'/movies/:id(\n+)'`

130 `'/movies/:id'`

70 `'/home'`



70

# MATCHER

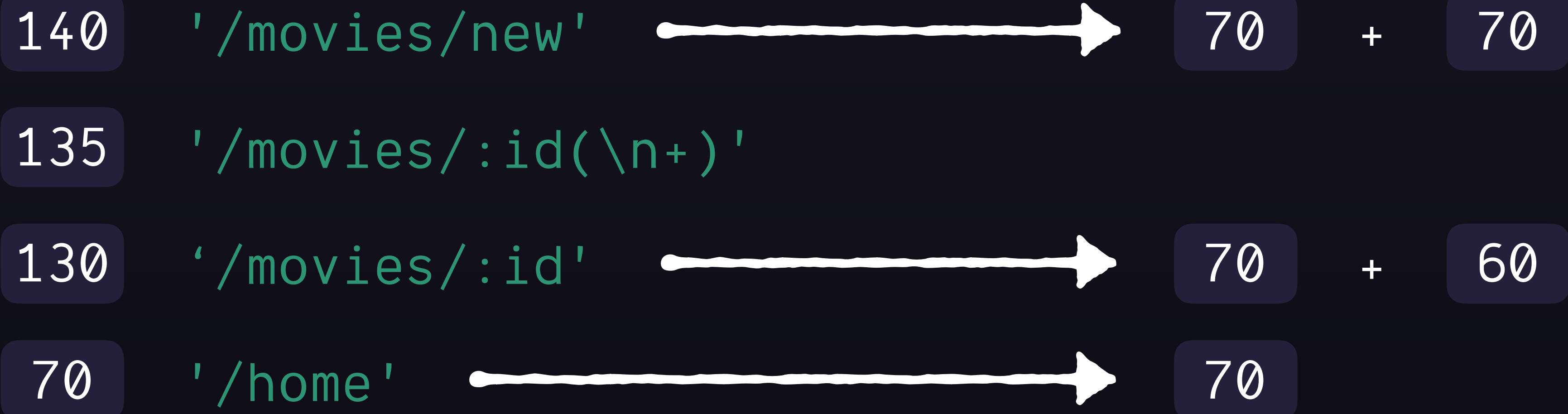
140 `'/movies/new'`  70 + 70

135 `'/movies/:id(\n+)'`

130 `'/movies/:id'`

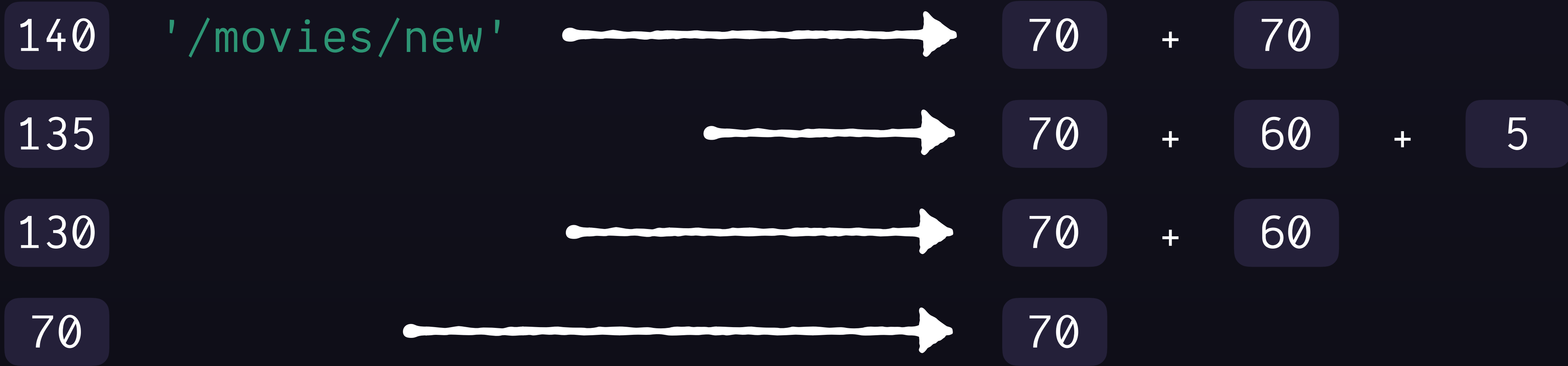
70 `'/home'`  70

# MATCHER



# MATCHER





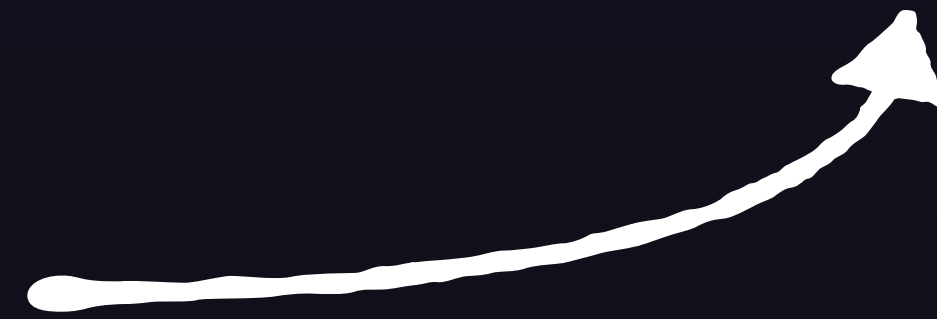
# ROUTER

```
{  
  path: '/movies/new',  
  params: {},  
  name: 'MovieNew',  
  component: ...,  
  query: {},  
  hash: ''  
}
```

# ROUTER

```
{  
  path: '/movies/new',  
  params: {},  
  name: 'MovieNew',  
  component: ...,  
  query: {},  
  hash: ''  
}
```

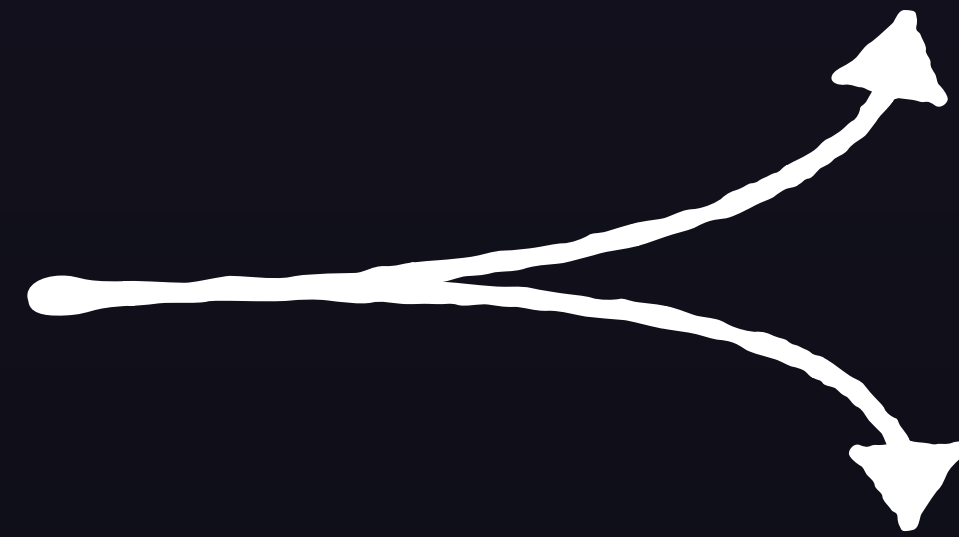
View COMPONENT



# ROUTER

```
{  
  path: '/movies/new',  
  params: {},  
  name: 'MovieNew',  
  component: ...,  
  query: {},  
  hash: ''  
}
```

View COMPONENT





 <https://movies.com/search?genre=horror&page=1#filters>



**HISTORY**



**MATCHER** ← **ROUTER** → **COMPONENTS**



**THANK YOU!**